

**TELESCOPING BOOM ACTUATION MECHANISM FORMED OF
CONCENTRICALLY NESTED TUBULAR BOOM SECTIONS MUTUALLY
ENGAGED BY ROLLER ASSEMBLIES RIDING ON HELICAL TRACKS**

ABSTRACT

A telescoping boom mechanism for deploying an expandable structure, such a hoop-supported antenna, comprises a plurality of concentrically nestable tubular boom sections, that are mutually engageable with one another by way of roller assemblies and helical tracks formed thereon. The tubular boom sections are caused to telescopically expand or retract along a deployment axis by means of a rotational drive motor coupled to an outermost one of the tubular boom sections.